

AN IOT BASED APPROACH OF E –HEALTH SURGERY

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ABSTRACT:

In today's world, ACIURGY plays a very important role to enhance the MEDICAL field. Aciurgy is a narrow field of vision. An aciurgy which performs the various complex operations with minimal invasion, higher accuracy and flexibility are used in surgeries. Here, we proposed wireless controlled surgeries. The present work shows the design, simulation and fabrication of a high resolution wireless aciurgy system. This paper will discuss thee research areas as mentioned above and also provide their interrelationship with examples based on application. Finally, it will include some thoughts on the factors driving the acceptance of IO T based surgery and of how research can be most effectively organized. The system model comprises of transmitter model and receiver model. Transmitter model is operated by the person who will be out of the patient which is a surgeon. Receiver model receives the commands from transmitter and do the surgical steps accordingly on the patient body. The patient's body characteristics is monitored during the surgery and the data is updated to the doctor who do the surgery at another end via IOT. Also, the doctor can see the patient's body by means of camera module, so that editing of human boding can made easy. The movement of surgical elements like blades etc., are controlled by means of joystick. All the parameters are controlled and monitored via IOT.

INTRODUCTION:

In recent year's surgery plays a key role in the medical field. Surgery allows doctors and surgeon to perform different type of complex procedure with more accuracy, precision and flexibility at the same place to control. There are various surgeries like abdominal surgery, rectal resection, cardiac surgeries where doctors prefer surgery. Thus our system will be based on surgery performs the surgical operations and to control the position performed by surgeons is done via IOT. The most widely used surgical system includes mechanical arm, camera arm and some of the mechanical arms are used to pick and place the surgical tools, while other system are used for actual insertion in the human body to perform the surgery. The camera arm captures the patient information and sends this information to the computer console, where the surgeon monitors the patients. The surgeon can control different positions. This surgery used hardware and software in the surgery are extremely costly which is not affordable for every surgery. In complex operations procedure, number of helper required in operation room are more.

EXISTING SYSTEM:

According to WHO, the best technology used at present is interaction in the medical field is by audio and video communication. This is the beginning of the implementation of the Internet of Things in the telemedical field. Other than audio and video communications, we believe that monitoring the patient's health status is also important. Current the technology is also using some sensors to monitor the patient's health, to gain knowledge of the context, to learn the behavior patterns and define the patient's health In the previous method we are making the manual surgery even if we are in not expert that operation. Due to this we are helpless to the patient even the emergency system.

PROPOSED SYSTEM:

In this paper we are mainly focused on the Internet of things to execute the online data transmission for remote controlling and monitoring system. In the operation machine we are using the several surgery equipment's for the faster and perfect process.

ADVANTAGES :

- Remote operation is possible from anywhere
- Patient camera live view is possible by using
- Faster response, less data loss possibilities
- Easy to handle the Emergency surgery situations

METHODOLOGY

This paper consists of hardware and a software part. The hardware configuration of this project is using a main controller for controlling. Microcomputer with built-in Wi-Fi. Wi-Fi in Wi-Fi module allows devices to communicate in a wireless fashion through the Internet. In addition, it has a 1.2 GHz quad core Arm based CPU which is sufficient to produce an embedded system. The camera has a connector that interfaces with the in Wi-Fi module.

DESIGN COMMUNICATION

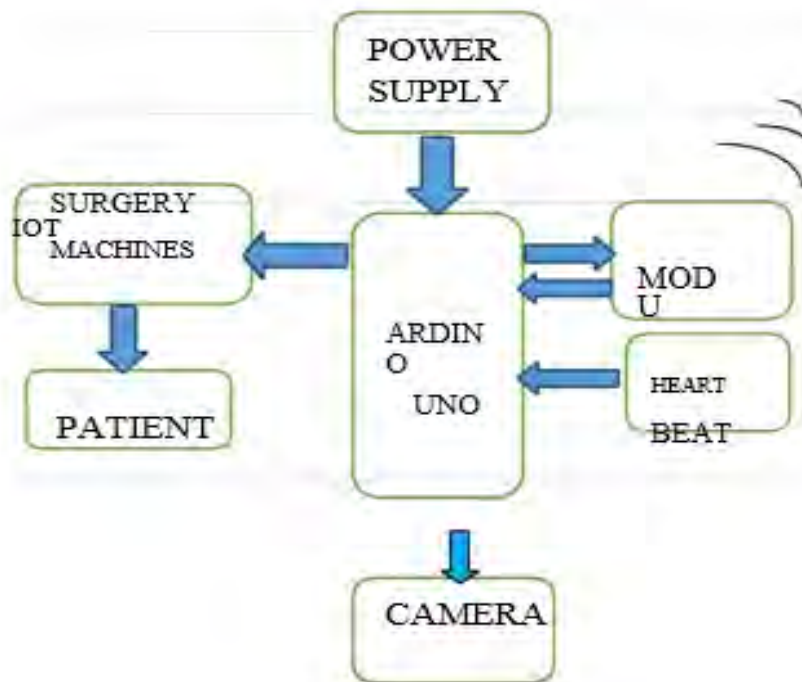
The project has been separated into two parts which are the transmitter part and the receiver part. The Wi-Fi is used. Transmitter model is operated by the person who will be out of the patient which is a surgeon. Receiver model receives the commands from transmitter and do the surgical steps accordingly on the patient body.

BLOCK DIAGRAM:

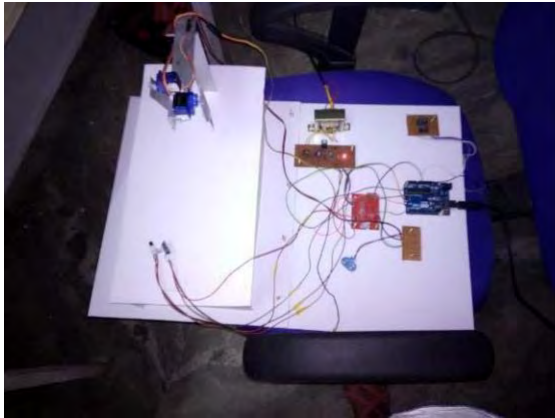
TRANSMITTER SIDE



RECEIVER SIDE



OUTPUT:



FUTURE ENCHANCEMENT:

Progress needs to be made, for example, in defining what it means to be safe with highly mobile electromechanical devices with 5G network. This is difficult enough when real-time human judgment is still in the loop, but when progressively more autonomous capabilities are introduced, In our future enhancement this difficulty that arise in setting standards of acceptable risk will be solved.

CONCLUSION:

The successful development of wireless connection between the PATIENT and SURGEONS, the wireless CONTROL has to other common input devices, this approach was compatible with wireless medium as well. In conclusion, the Internet of things is ready to implanted on the ONLINE ACIURGY successfully completed. When compared to other common input devices, this approach was compatible with wireless medium.

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